Key Features:

- Articulated 5-Axis, 360° rotation, pitch and yaw with 500mm reach

- Fast, 2 second cycle time

- Versatile, easily program complex tasks and motion paths

- Easy to use teach pad and software

- Miniature Optical incremental encoders

- Complete with controller, software, cables, teach pad, gripper and manuals

The 5ARA is a complete self-contained five axis vertically articulated robot arm system designed for bench top automation. The hand terminates in a mounting plate for grippers, and comes standard with electric gripper fitted. The 5ARA uses light weight, high efficiency digital motors driving through steel reinforced polyurethane timing belts and the compact micro-stepping drives providing both speed and precise control. The 5ARA includes the simple to use controller with fast CPU and DSP processors an incremental optical encoders and an intuitive teach pad.

The 5ARA is, fast, accurate and reliable and has a 500mm reach. It is easy to program and is capable of the most complex tasks. The Software makes getting started easy with the programming of the robot, from very simple tasks to the most complex motions, being quickly and easily programmed. Interfaces and peripherals may be programmed, assisted by project manager software in one Windows screen. The Arm comprises two limbs 250mm each plus 360 degrees base rotation, therefore, the workspace is a sphere 1000mm diameter.

The encoders on the 5ARA are miniature optical incremental encoders fitted to each axis and act as watchdogs. The loop is closed after completion of each individual motion, which is not the same as servo control. Without encoders the 5ARA will run accurately and indefinitely open loop without error because of the micro-stepping drives and accurate transmission. If the robot has a collision, the controller will not know and will continue with the program, and the robot could be out of position. Such collisions usually only occur accidentally due to programming error, and it would then be necessary to run the calibration routine after such a collision. A software solution is provided for quick calibration using the encoder to accurately read back the position of the robot when de-energized. The robot can be positioned by hand and its position updated by pressing a key on the keypad. The kinematics software then computes the exact X-Y-Z position of the robot with the hand pitch and roll in degrees.

Specification

Drives	High power micro-stepped hybrid stepping motors, encoder watchdogs
Reach	500mm in any direction; 360 degree waist rotation
Repeatability	0.1 mm
Payload	Nominal 500g, max 1Kg at flange (repeatability and speed degrade with increasing payload and reach).
Compliance	droop at 250mm at nominal payload: 0.4mm droop at max reach with max payload: 2.3mm
Maximum Speed	Shoulder 180 deg/sec Elbow 270deg/sec Waist 180 deg/sec.
Standard Cycle Time	2 Seconds
Max Torque For Hand Pitch / Roll	2 Nm (repeatability figures degrade).
Power	110/240v ac 420VA (standard controller)
MTBF	10,000 Hours
Safety	Class 2 stop circuit, stall detect, risk assessment guide. High intensity LEDs along the arm serve as awareness barrier
Inputs	8 Inputs: 5 used by robot; 3 spare
Outputs	8 Outputs: 2 used by robot; 6 spare

Required

A suitable PC with minimum; Pentium processor, 1GB RAM, 20GB HDD, CDROM Drive, and Windows XP or above
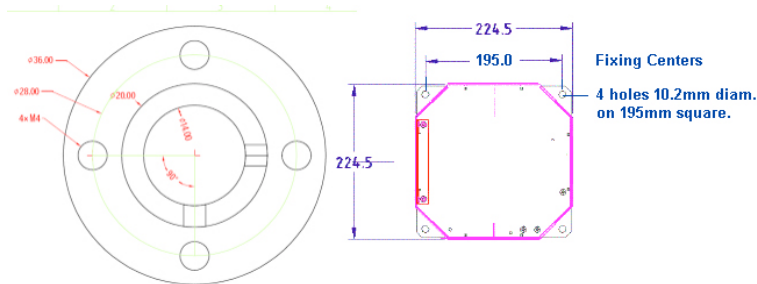
Ordering Information

Model Number:	**5ARA**
Consists of:	1 x 5ARA robot with encoders and electric gripper
	1 x Controller and cables
	1 x Set of software
	1 x Set user manuals

Weights and Dimensions

Un-Packed		**Packed**	
Approximate Dimensions (mm)	Robot: 12.8Kg/29lbs	Approximate Dimensions (mm)	Robot:
Approximate Weights	Controller: 11kg/25lbs	Approximate Weights	920L x 320W x 330H 28kg
			Controller:
			670W x 540D x 310H 25kg

Bytronic Ltd., reserves the right to make product improvements at any time and without notice and is not responsible for typographical errors.

Please note the robot and controller are shipped in a special transit cases, designed to withstand rough handling.
The cases are chargeable and if returned in a reusable condition the cost is refunded.